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THE TIMES AND MODES OF THE INTRODUCTION OF THE EXOTIC DISEASES OF CHILDREN INTO AMERICA.[1]

BY J. LEWIS SMITH, M.D.

THE tribes of American Indians occupying North and South America, left to themselves, have never, so far as I am aware, made any important or effective effort to improve their condition. When the Europeans discovered America the chief endeavor of the Indian was to obtain shelter from the weather by rudely constructed huts, to appease hunger by vegetables of spontaneous growth, or by the products of hunting and fishing, and to repel the encroachments of neighboring warlike tribes by implements scarcely better than those of the stone age. Their diseases were chiefly such as are due to climactic influences, such as pertain to the normal growth and decay of the body and to the disturbance of its functions.

The medical literature of America, at least that of North America and in the English tongue, was very meagre during the two centuries succeeding the discovery of America. But there is, I think, sufficient historical evidence that the highly contagious and fatal diseases of infancy and childhood, which to a great degree check the increase of population in both hemispheres, were unknown to the American Indian until communicated by the European.

First we will consider those two loathsome diseases[2] of a vicious and dissolute life, diseases which now prevail among the profligate in all countries reached by commerce and travel. These two diseases were not differentiated from each other until long after the discovery of America. Though described in text-books as diseases of adults, they not infrequently affect children in one way or another. Inherited syphilis is likely to be fatal in infancy unless properly treated, and in those who survive it is a common cause of scrofula or deterioration of

[1] Address at the opening of the Pædiatric Section of the Pan-American Medical Congress.

[2] Syphilis and gonorrhœa.

constitution. The Indian, at least in North America possesses, in his normal state, a vigorous constitution and great power of endurance; but broken down by inherited disease and a dissolute mode of life, his system becomes frail, much less capable of endurance, and he is liable to an early death.

The second of the diseases which we are considering, gonorrhœa, is a serious infliction upon a people having no medical profession or science of medicine. It is likely to produce a severe specific conjunctivitis, with subsequent blindness and other ailments in young children, besides deterioration of the system.

Certain it is that the two maladies to which we call attention were not only not differentiated from each other, but had attracted but little attention on the part of the laity and physicians—probably on account of their rarity—until the last quarter of the fifteenth century. In the last decade of the fifteenth century the army of Charles VIII. of France had entered Spain and Italy in the vain attempt to establish a French empire extending from the Baltic to the Mediterranean, and bands of dissolute soldiers, roving through Southern Europe, disseminated the loathsome diseases of which we are treating. In the belief that they were forms of the same disease, they were designated the morbus gallicus in Italy and Spain, which countries suffered severely from the invasion of the French army. This term will, for convenience, be used in this paper to designate syphilis and gonorrhœa before they were differentiated. The morbus gallicus was so frequent in Southern Europe during the stay of the army of Charles in Italy, and especially at the siege of Naples, that it was regarded as an epidemic thought by some to be due to an unfavorable conjunction of the stars. The discovery of the Western hemisphere at this time, and the fact that the sailors and soldiers of Columbus had the morbus gallicus, also gave rise to the absurd and untenable theory that the diseases embraced under this name were communicated by the natives of the West Indies to the European navigators, when the reverse was true.

Francesco Delicado states that the morbus gallicus, with which he was familiar from sad personal experience, prevailed as early as 1448 in Rapallo, and he adds that it was conveyed to America by the men under Columbus (Baumler). He resided several years in Italy. Friedberg wrote in his interesting monograph that certain persons holding high positions in church and State, even those in the quiet of monastic life, presented lesions which we recognize as those of the morbus gallicus, in the decade preceding that of the discovery of America, and he quotes the following passage from the *Annales Danicæ* of 1483, nine years before the discovery of America: "Morbus gallicus sævit christianos." R. Diaz de Isla, in a monograph written about 1510, states that he had treated the morbus gallicus in Barcelona before the

King of France invaded Italy, and also that he had treated the same disease in men from the caravels of Columbus. Did time permit we might quote other extracts from the writers of the fifteenth and sixteenth centuries, showing that the morbus gallicus was an Oriental disease, which gradually exended westward. Was it designed by Providence to expose and check degrading and immoral habits? But the innocent suffered with the guilty. The natives of the West Indies, at first regarding the strange beings who arrived in winged caravels as divine personages, were soon reduced to servitude by the lash and bloodhounds so as to work in the mines and perform other menial tasks, but their worst infliction was the reception of loathsome and fatal diseases, so that their aggregate population soon began to diminish.

Syphilis and gonorrhœa are both highly infectious, and we can easily understand how they were conveyed to continental America by expeditions like that of Cortez. It appears that they extended slowly through the temperate regions of North America, for John Hermann Bass, in his exhaustive treatise on the *American Indian States* (page 588), says that syphilis reached Boston in 1646, and was such a novelty that no one succeeded in curing it until a young physician arrived from the West Indies.

SMALLPOX.—In a treatise written by James Moore, member of the Royal College of Surgeons, published in London in 1815, and dedicated to Edward Jenner, Moore states that he learnt the following facts from the chronicles which have been preserved: The first settlement was made by Columbus upon the island Hispaniola or San Salvador, and he was actuated by humane motives, "but he was surrounded and succeeded when he died in 1506 by a low class of adventurers who were actuated by avarice and fanaticism." It was computed that Hispaniola contained one million of inhabitants when the caravels of Columbus arrived, and Moore ascertained from the chronicles of this period that smallpox was introduced into the island in 1517. It of course spread rapidly, since no mode of prevention was known at this time except isolation, and the Indians had no apartments for quarantine purposes.

The bold endeavor of Cortez to conquer Mexico owed its success to the terror with which the natives were inspired by the introduction of smallpox into their country, rather than to anything accomplished by military art. Children without adequate domiciliary protection and parental care, attacked with smallpox usually die, and if a whole family be attacked, the condition of all is deplorable in the extreme.

In the history of *Ferdinand Cortez and the Conquest of Mexico*, it is stated that in 1518, when this navigator sailed from Cuba upon his expedition to Mexico, smallpox had not reached Cuba and that there was no person infected by this disease in his fleet. But Velasquez, the governor of Cuba, taking offence at the independent action of Cortez, sent an armament with orders to seize and return him a prisoner. Before the armament sailed the smallpox reached Cuba, and although the Spaniards knew the nature of the disease, a negro having it was allowed to join the expedition. He landed, covered with pustules, among the Indians of Zempoalla, who were entirely ignorant of smallpox or of any method to mitigate its violence.

Dr. Moore says that the smallpox contracted from the negro spread through Mexico with such virulence that in a short time 3,500,000 natives were destroyed in this kingdom alone, and heaps of skeletons of those who perished of this malady were found years afterward in shaded localities where they had been left to die by their friends. It appears from a communication sent by an ecclesiastic connected with the national vaccine establishment, that the ravages by the smallpox in Central and South America were not transient, for in the new kingdom of Leon several warlike Indian tribes were nearly exterminated by this malady, and fifty years previously, heaps of bones, relics of this disease, were found in out-of-the-way places under tufted oaks; even now, according to this writer, so great is the dread of smallpox that if in certain of the tribes an Indian sees a companion stricken with this disease, he leaves him his horse and provisions, and flees to a great distance in the forest.

From the nature of smallpox we can readily understand how it rapidly extends over a wide area, even an entire continent, if not prevented by vaccination. But before the era of vaccination and of personal and domiciliary disinfection it must have been impossible to prevent the propagation of smallpox at any point where infected European navigators landed and came in contact with the natives.

That apostle of civil and religious tolerance, William Penn, a leader of the Society of Friends, or Quakers, sailed from England to the New World on September 1, 1682, with a crew of one hundred followers. When his vessel, the Welcome, reached its destination on the Delaware, two months afterward, it was a pest-house of smallpox, for one-third of those on board had died of this disease. The wide dissemination of smallpox through the temperate regions of North America must have resulted from the arrival of this vessel so strongly infected with the variolous virus.

It is well known that smallpox was early introduced into New England. That remarkable expounder of the Protestant faith and the ablest divine in New England, Cotton Mather, not only combated witchcraft with such vigor and determination that nineteen witches were executed, one of them, Giles Cory, by slow torture, but he also saw the necessity of stubborn resistance to smallpox, which destroyed and disfigured the early settlers of New England. Vaccination was unknown until 1775, when the protective power of the vaccine virus was discovered by the immortal Jenner. But inoculation by the smallpox virus was beginning to be employed in the time of Mather, since it had been ascertained, though not believed by many of the laity and physicians, that inoculation with its own virus rendered smallpox milder. Mather strongly recommended inoculation at the peril of personal violence, so strong was the objection to it. The statement recently made that Mather, strongly opposed to the religious teachings of Penn, endeavored to intercept him in his voyage across the Atlantic and reduce him to a menial position in the West Indies, is probably a fabrication. But if not, and if he had succeeded in overhauling Penn's vessel, the Welcome, he no doubt would have wished himself back in Salem searching for witches, since it was much easier for him to subdue suspected witches than smallpox with which Penn's vessel was so completely infected. We can readily understand how smallpox introduced into the West Indies, Mexico, the Province of Pennsylvania, and into New England, in the absence of vaccination, rapidly spread over the Western hemisphere.

SCARLET FEVER.—Scarlet fever and measles, different as are their symptoms and anatomical characters, were considered forms of the same malady until the observations of Sydenham led to their differentiation about two centuries after the discovery of America. Inasmuch as they were not differentiated, the term measles, which was applied to an epidemic disease which appeared in the West Indies soon after their occupation by Europeans, may have been applied to measles or scarlet fever or sometimes to the one and sometimes to the other. But we infer from facts to be mentioned, that scarlet fever, insidious as it is and highly infectious, did not occur in the Western hemisphere until within the last two centuries. We will describe in our remarks on diphtheria the epidemic which, commencing in Kingston, about forty miles east of Boston, in 1735, gradually extended over New England, and reached New York City in two years. Monographs were written on this disease by Dr. Douglass, of Boston, and Dr. Bard, of New York. Dr. Bard says that Dr. Douglass described the same disease which he observed. We shall allude to this epidemic in describing the origin of diphtheria in this country. At present we desire only to say that Douglass states that patients exhibited a "flush in the face, and an erysipelas-like efflorescence on the neck, chest, and extremities. . . . "The flushing," he adds, "goes off gradually with a general itching, and in a day or two the cuticle skin scales or peels off, especially in the extremities." Is not this a clear description of scarlet fever? But some of those who have described this epidemic, as we shall see, say that one attack of the new malady does not preclude another, a noted characteristic of diphtheria and not of scarlet fever. It seems to me that this epidemic, which gradually spread westward over New England and Long Island, crossing the Hudson and extending to an unknown distance in the British possessions before it finally ceased, was in some places at least a combination of scarlet fever and diphtheria such as frequently occurs at the present time.

With the exception of the brief allusions of Dr. Douglass to the widespread epidemic disease which exhibited the characteristics of scarlet fever occurring at the date mentioned, I have not been able to find any allusions to this exanthematic fever in the various writings which I have consulted prior to those published in the latter part of the eighteenth century.

Noah Webster, in his treatise on epidemics occurring in America tabulated those taking place since 1618. The first epidemic of scarlet fever which he recorded occurred in Philadelphia in 1774; subsequently it was frequent in America. Prof. Louis Thomas, of Leipzig, in his monograph on scarlet fever published in *Ziemssen's Encyclopædia* states that this disease spread from Europe over America. According to him it first appeared in Iceland in 1827. Twenty years later, he says, it extended over Greenland. Even if the statistics given are not exactly correct, we infer from the fact that scarlet fever was so seldom noticed by writers in America until within the last one hundred years, that its extension over the American continent did not occur for many years after the Kingston epidemic had either ceased or was rare.

MEASLES.—Most writers on the eruptive fevers agree that Rhazes, a Mahometan, belonging to the Arabic school of medicine, described measles in the tenth century. Sydenham in 1670, and Morton in 1674, gave such complete descriptions of measles and scarlet fever that they were henceforth regarded as distinct diseases, as we have stated above. In treating of scarlet fever we have stated that the late differentiation of this disease from measles renders it uncertain whether the eruptive malady which along with smallpox was so fatal to the Indians in the first decades following the discovery of America was measles or scarlet fever, but the following facts lead us to infer that it was the former.

Many people whose knowledge of measles has been obtained by observing cases treated under favorable circumstances can scarcely believe that epidemics of this disease are always very fatal among those who, like the American aborigines, are inadequately protected from cold and vicissitudes of weather, and whose surroundings are insanitary. Instances might be related showing the mortality of epidemic measles under such circumstances, as the epidemic among the Fiji Islanders, of which 40,000 died; the epidemic in the Faroe Islands, by which three-fourths of the inhabitants were attacked, with many deaths (Baumler); the epidemic among the Amazon Indians of Brazil, when half of the tribe perished; and the epidemic in the national army of Paraguay in the commencement of the war with Brazil, when one-fifth of the entire army perished.

In the late Civil War in the United States, according to the statistics published in 1864, 38,000 cases of measles had occurred in the army with 14,000 (?) deaths. Moreover, as a reason for the belief that measles was introduced into America previously to scarlet fever is the fact that after its differentiation its epidemics were recorded by reliable writers many years before mention is made of scarlet fever. Thus Noah Webster had tabulated eleven epidemics of measles when he recorded the first epidemic of scarlet fever—that in Philadelphia in 1778.

DIPHTHERIA.—Those who have made a special study of diphtheria incline to the belief that its first occurrence in North America was in New England. It is stated that Samuel Danforth, of Roxbury, a graduate of Harvard, lost three of his children in 1659, within two weeks, from a disease which was designated "malady of bladders in the windpipe." Again, John Josselyn made two voyages to New England in 1638 and 1663, and in his memoranda he states that the English in New England "are troubled with a disease in the mouth or throat, which hath proved mortal to some in a very short time. This disease is designated as quinsies and impostumations of the almonds with great distempers of colds." Whether these early New Englanders had diphtheria or not I am unable to say, but nearly a century had elapsed from the time of Danforth and Josselyn when the much wider and more fatal epidemic, more clearly one of diphtheria, occurred. I have alluded to it in my remarks on scarlet fever, but the importance of the facts in regard to diphtheria requires that they be repeated in this connection.

On March 20, 1635, at Kingston, a town fifty miles eastward of Boston, the first case occurred of the disease, which was destined to overrun the British possessions in North America. The first forty attacked by it died; the first patient survived three days; the three next attacked lived four miles from the first patient. When the epidemic reached Boston, Dr. William Douglass made a full and accurate clinical examination of it, and wrote a monograph containing the result of his observations. Douglass, not knowing that Boston was soon to be the "Athens of America," states in his exordium that in plantation life neither honor nor credit are to be acquired by writing. His sole object in publishing his monograph was to induce others to investigate the disease more fully. Death, he states, usually occurred from the fauces or neck, which was greatly swollen. J. Dickinson, A.M., of Cambridge, a clergyman, also published what he designated "Observations on that terrible disease vulgarly called 'Throat Distemper.'" He writes: "Some expectorated incredible quantities of a tough whitish slough from their lungs. . . . I have seen several pieces of this crust several inches long, and near an inch broad, torn from the lungs by the vehemence of the cough." Dickinson also remarks that one attack of the epidemic disease does not protect from a second. One patient had at intervals four distinct attacks, the last being fatal. The fact of the recurrence of the throat affection is sufficient proof of its diphtheritic rather than scarlatinous nature, as is also the fact that the characteristic pellicular inflammation sometimes occurred upon abraded or wounded surfaces at a distance from the fauces, while the latter was but slightly or not at all affected. This widespread and gradually extending epidemic of diphtheria was the first occurring within historic times in North America and probably in the Western hemisphere.

The Honorable Cadwallader Colden, Esq., His Majesty's Lieutenant-Governor of the State of New York, wrote a letter to Dr. Fothergill in 1753, printed in the *London Medical Observations and Inquiries*, vol. i. He writes that this new throat disease extended gradually westward from Kingston, traversing New England, but it did not reach the Hudson River until two years had elapsed. Colden said that it remained for some time on the east side of the Hudson, but finally crossed to the west side, and he believed that it spread over all the British colonies in America. As might be expected, in due time it reached New York, and it was described by Dr. Samuel Bard in a paper published in 1771 and having the following title: "An Inquiry into the Nature, Cause, and Cure of the Angina Suffocativa, or Sore-throat Distemper." Bard wrote as follows: "Upon the whole, therefore, I am led to conclude that the disease called by the Italians morbus strangulatorius; the croup of Dr. Home; the sore-throat of Huxham and Fothergill; this disease, and that described by Dr. Douglass, of Boston, however they may differ in the symptoms of putrifescency and malignancy, do all bear an essential affinity and relationship to each other, and in fact arise from the same leaven." Dr. Jacob Ogden, of Jamaica, Long Island, described this widespread throat distemper as he observed it in the townships of Long Island. His last paper on this malady was published in 1774, thirty-nine years after the first case in Kingston, and just before the breaking out of the Revolutionary war. I am not aware that any outbreak of diphtheria occurred in this country during the eighteenth century, after the commencement of the war. The fact that families deserted their homes and fled to a distance for safety, especially from the cities along the Atlantic coast, may aid in explaining the cessation of this epidemic. After the disappearance of this widespread epidemic we hear little or nothing of the occurrence of diphtheria upon this continent until nearly a century had elapsed, except that cases of pseudo-membranous laryngitis, popularly designated membranous croup, occurred in many localities, but with little or no contagiousness. It may have been produced by the streptococcus, and have been a croup of the pseudo-diphtheritic nature.

True diphtheria prevailed in Europe in the first half of the present century, and received its name from Bretonneau in 1821. In the decade following 1850 it reappeared in a severe form in America, and conveyed by commerce and travel, it has extended over a large part of the Western hemisphere, and has become established or endemic in its cities.

The facts related above show that while a higher mental attainment and the comforts and achievements of civilized life have resulted from the discovery of America by Columbus, the most fatal and infectious diseases of childhood have also been imported from the old to the new world. A recent French statistician says that the aggregate number of the French race is gradually diminishing, and largely from the effects of diphtheria.

It would be interesting were it possible to ascertain exactly what were the indigenous diseases of the children of American Indians. An interesting paper entitled "Diseases of the Indians West of the Mississippi" was published in the *N. Y. Med. and Phys. Journal*, 1822. The author writes as follows: "The diseases of the Indian children are few compared with those of civilized life. Irritations of the bowels sometimes occur, yet they are not at all frequent, and they have immediate means of relief in a prescription made from burnt mussel-shells powdered and given in dittany tea. Diarrhœa and croup also occur, and those inhabiting marshy land, especially such as reside on the shores of rivers that are at times inundated, are somewhat subject to intermittent and remittent fevers in the autumnal and spring months." The writer adds that rheumatism and pulmonary consumption are common among the Indians west of the Mississippi, and that those who have been reduced by the enervating corruptions of the frontier settlers have of late been affected with typhus.

Again, in the report of the Indian establishment on an island in Lake Huron, in 1841–42, the following is the statement of the diseases prevailing: Toothache, rheumatism, neuralgia, ague, wounds of chest, and mild whooping-cough. It is seen that all of the fatal acute infectious diseases of American children of the present time which desolate innumerable homes, and check to a great extent the increase of population, have been imported from the Eastern hemisphere. The medicine man of the Indians was probably more successful in curing the Indian child by his incantations and few herbs, before the discovery of America, than is the educated European physician having a diploma from a renowned school, who is compelled to treat more fatal infectious diseases at the present time. Indeed, so far as we can perceive, if the Eastern and Western hemispheres had been created separately, revolving around each other like binary stars, the inhabitants of the Western world, though lacking the cultivation of the Eastern world, would have escaped the ravages of the most infectious and fatal of the maladies which affect the human race.

A CASE OF LEUKÆMIA, WITH RARE LYMPHOID GROWTHS OF ORBITS AND PAROTID GLANDS.

BY THOS. D. DUNN, M.D.,
PHYSICIAN TO THE CHESTER COUNTY HOSPITAL, WEST CHESTER, PA.

H. G., aged eight years, came under my observation in the spring of 1891, in consultation with Dr. Pyle, of Glen Mills, with a stubborn case of granular conjunctivitis. Although slightly anæmic at the time, he seemed to enjoy good health. There was no history of cancer, syphilis, or tuberculosis in either the father's or mother's family. He had a younger sister who made a complete recovery from a severe attack of scarlatinous nephritis a year before. The subject of this report had not been a robust child, but never had any serious illness. He was unusually intelligent and studious.

The lids improved under yellow oxide ointment and occasional applications of nitrate of silver solution.

For the anæmia tincture of the chloride of iron and cod-liver oil were prescribed. In autumn he returned to school and studied without discomfort. General condition good.

The patient was again brought to me December 15, 1891, for a slight swelling in the left parotid gland—about one inch in each diameter. This swelling was quite hard, with well-defined outline, and immovable. It impressed me as a growth of unusual position and character. It was not tender, but was slightly adherent to the skin, which was not discolored except by enlarged subcutaneous veins.

The parents noticed the swelling three weeks previous to my examination, but attributed it to cold contracted at school, where he sat by a broken pane of glass—his left side being exposed. The cervical lymphatic glands were not enlarged. Skin and mucous membranes pallid. He was ordered a highly nutritious diet, the syrup of iodide of iron internally, and locally tincture of iodine to the enlarged gland.

Dr. Pyle was again called to the case January 23, 1892, and found slight increase in the parotid swelling, and an appreciable enlargement of the cervical lymphatic glands of left side. During this period the anæmia and loss of flesh steadily progressed in spite of the most carefully regulated diet. Dr. Pyle directed as much easily assimilated nourishment as possible, and the continued use of tincture of chloride of iron, Fowler's solution, bichloride of mercury, and, at times, quinine and cod-liver oil. Soon the axillary and inguinal lymphatic glands began to enlarge. About the middle of March a hardness began to develop over the eyes, with slight thickening in both temporal regions. The pulse was weak, and ranged from 96 to 116. Temperature was never below 99°, or above 101° during February and March. He kept about the house, and was frequently on the piazza for play. The anæmia and emaciation steadily progressed.

April 5. The patient contracted a heavy cold, causing a temperature of 103°, and severe sore-throat. I was called in consultation April 12th, and found an ashy gray membrane over both tonsils, extending to uvula and soft palate; submaxillary lymphatic glands enlarged and tender; temperature 102°; pulse 130; swallowing difficult and painful; marked emaciation; lips, tongue, and nails blue and very anæmic; occipital, inguinal, axillary, and cervical lymphatic glands moderately enlarged, but not tender; spleen and liver slightly enlarged, but no tenderness over them. The patient had suffered from attacks of pain in splenic region for some time. The left parotid gland

FIG. 1.

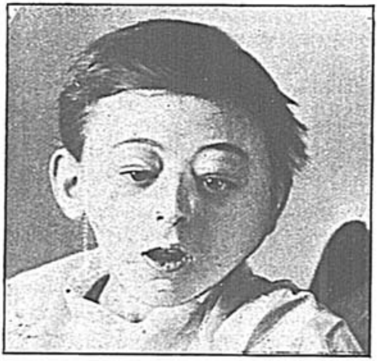
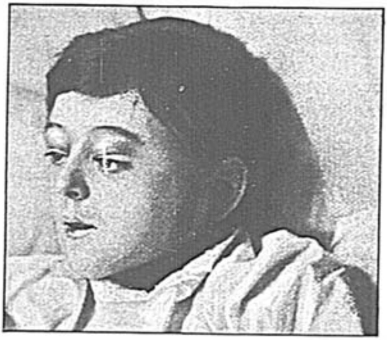


FIG. 2.



was greatly enlarged, of stony hardness, outline well defined. There were also crescentic bodies over either eye, not firmly connected with lids. These swellings began at nasal end of orbit, and extended outward beyond external canthus, the larger end toward the nasal angle. These were also of marked hardness, but somewhat elastic, free from tenderness, slightly attached to lids, but firmly attached to orbital arches. They caused considerable exophthalmus, but only partially interfered with motion of lids. No conjunctivitis; corneæ healthy; vision normal.

Similar, but flat, hyperplasias were found in each temporal region; the outline of these was not so well defined. A careful search revealed no other such growths. Marked deafness was attributed to the closure of external auditory canals by the parotid and temporal hypertrophies. Treatment was directed to the recent diphtheritic complication.

14th. The condition of throat was improved; temperature 101°; pulse rapid, feeble, compressible; submaxillary lymphatics decreased and less tender to touch. Nourishment and stimulants were given freely and well retained. A drop of blood under the microscope showed a decided increase in white corpuscles. The blood was of a very pale color, resembling sero-pus mixed with blood. This examination confirmed the diagnosis of leukæmia, which had been suspected at previous visits by both Dr. Pyle and myself.

17th. Slight improvement in the general condition, owing to the subsidence of the acute diphtheritic attack. Temperature 100°; pulse 124.

At this visit a careful blood-count was made. The result showed one colorless corpuscle to fifteen red; 1,830,000 corpuscles (of which 122,000 were white) to a cubic millimetre, and about 30 per cent. of hæmoglobin. Both hæmoglobin and number of corpuscles were less than one-third the normal amount.

May 7. I saw him for the last time. The anæmia and emaciation had increased; temperature 100⅗°; pulse 124, and very feeble. The deafness had also increased, but vision was still good. Unfortunately no ophthalmoscopic examination was made. The leukæmic growths had all increased, and a small growth about one-half inch in diameter had developed in the right parotid gland, directly in front of the ear.

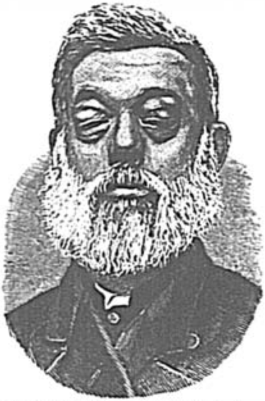
The little sufferer had had several attacks of epistaxis, and on May 5th had two hemorrhages of bowels. He steadily grew weaker, and died of exhaustion May 18th. Unfortunately, we were unable to secure an autopsy, or even to obtain a portion of the described growths for microscopic examination. There can be no doubt, however, as to the diagnosis of leukæmia.

After a careful search I have been able to find the record of but few cases of similar leukæmic growths; doubtless there are others, but the scanty literature of the subject is indicated by the absence of any reference to this condition by modern writers in our leading medical works.

Dr. Henry D. Noyes (*Diseases of the Eye*, p. 666), however, cites a case of lymphoid growths of both orbits in Hodgkin's disease. This case was reported in full in *The Medical News*, 1882, vol. ii. p. 681, by Dr. Richard H. Derby.

Cases have been carefully reported by Chauvel, Leber, Osterwald, and Fröhlich. The fact that I have been unable to find any reference to these in English, together with their very striking similarity to the clinical picture herein presented, justifies a somewhat full abstract of them.

FIG. 3.



Dr. Richard H. Derby's case of Hodgkin's disease.

Chauvel's case, reported in *Gazette hebd.*, 1877, No. 23. Patient, aged forty-one years, custom-house officer, was admitted to the military hospital, Val-de-Grâce, October, 1876, for a tumor of left side of face. Previous to this his health had been good; no history of syphilis. In July, 1876, a small swelling appeared in left upper eyelid. It developed rapidly, and was free from tenderness and pain. By September it became painful. On admission to Val-de-Grâce the swelling had extended to the cervical lymphatic glands of both sides, which formed a chain the length of the sterno-cleido-mastoid. There were tenderness and redness at the most prominent point above left eye. Ulcers were found on left buccal surfaces. Neuralgic pains of left side of face and head existed, with profound cachexia. Tonic treatment and sedative applications were resorted to without benefit. Diagnosis by Prof. Perrin: sarcoma of face with symptomatic adenitis. November 12th he came under the care of Chauvel. The tumor occupied the left supra-orbital region, left upper eyelid, extending from slightly above eyebrow to root of nose. Left jaw also swollen. Left eye completely closed.

The tumor was elastic and hard, and seemed firmly attached to subjacent parts. There was slight deafness. Patient saw black spots before right eye. Ophthalmoscopic examination revealed normal media. Papilla also normal, but outside of disk were several hemorrhagic spots, one large one above and one below. Prof. Perrin states that the appearance of the retina was that of hemorrhagic retinitis, the result of his general state, and possibly leukæmia.

November 19th, had slight hemorrhage of bowels.

Died November 21st, from exhaustion.

The tumor of upper eyelid was composed of cellular elements analogous to those of lymphatic glands; these were united without apparent stroma. The growth extended to all parts of the eyelid, and was not encysted. Teasing the tissue disengaged reticulum similar to that of lymphatics. Unfortunately the medulla of the bones was not examined. The only lymphatic glands involved were those of the cervical region. The spleen was somewhat enlarged. Liver greatly enlarged; cells not diseased; interlobular capillaries were dilated and filled with leucocytes; masses of leucocytes were also found in interlobular spaces—changes which characterize the leukæmic liver. The right side of the heart was filled with chicken-fat clot. Large quantities of leucocytes were found in the vessels of the heart, but the organ was free from disease.

Unfortunately, no microscopical examination of blood was made, but the marked anæmia, enlargement of the lymphatic glands of the neck, and the accumulations in the vessels of the heart and the hepatic glands make the diagnosis of leukæmia indisputable.

Leber's case, reported in *Archives of Ophth.*, 1877, No. 24, p. 295. C. F., aged forty-eight years, with the exception of an attack of rheumatism had enjoyed good health prior to August, 1876. No history or evidence of syphilis or malaria. At that time he noticed a swelling of under lids and later of upper lids of both eyes, and suffered from languor and weakness. In September was treated by a foreign oculist with iodine internally and locally, without benefit. Had an abnormal prominence of eyeballs. On account of eye trouble appeared before Göttingen eye clinic, April, 1877. His condition was striking and unusual. Lids of both eyes enormously enlarged in all diameters on account of elastic growths which were not adherent to edge of orbits. Skin of a brownish color, with enlarged subcutaneous veins. Marked exophthalmus, the result of the outward pressure of tumors, which extended to subconjunctival connective tissue; also smooth distended swelling in region of temporal muscle, which extended toward forehead, larger on right side. Nasal cavities and mouth normal. Ophthalmoscopic examination revealed an extensive hemorrhagic retinitis of both eyes; papillæ red but not swollen. Condition similar in each eye. Vision: O. D., 20/xx; O. S., 20/xxx. Heart normal. Urine: specific gravity 1010; reaction acid; considerable albumin; granular casts and fatty epithelium.

Liver and spleen decidedly enlarged. Blood examination showed a large increase of white blood-corpuscles.

A small piece of growth removed from conjunctival surface was examined. It was soft, somewhat jelly-like, slightly transparent. Microscopical examination showed lymphoid cells crowded into connective-tissue meshes. This growth was, doubtless, analogous to leukæmic growths in other organs. Lymphatic glands of both sides of neck enlarged, and large, painful, thickened tumefaction over sternum. Marked lassitude and debility. Temporary improvement derived from general sweats and acetate of potassium. In May the patient's general condition was much worse; temporal and orbital tumors increased; liver and spleen greatly enlarged.

His condition steadily grew worse, and he died at the end of October, delirium having existed for eight days.

Leber believed this interesting condition to be the result of leukæmia. He, however, admits the possibility of the retinitis being due to the nephritis, but remarks that the extravasations extending to the periphery of the eye-ground are unusual in the latter disease. Unfortunately, an autopsy was refused.

Osterwald's case, reported in *Archives of Ophth.*, 1881, No. 27, p. 203. Patient, a boy, aged four years, appeared at Göttingen eye clinic May 25, 1881. Parents had always been healthy; both syphilis and hereditary disease denied. The boy had measles at the age of two years, was pale and weak afterward, otherwise had been healthy.

Soon after Easter parents noticed a swelling in right upper eyelid, and later a similar swelling in left, the eyeballs protruding. When he appeared at the clinic the following symptoms were observed: Marked double exophthalmus. Both upper lids enlarged in all diameters, and under skin of left a network of bluish veins visible which extended to forehead and right temporal region. Right upper lid strongly pressed out by a hard, elastic tumor. This tumor began at orbital arch, to which it seemed attached, and extended from root of nose to outer angle of eye. In left upper lid was a similar growth, though not so large. In temporal region of either side was a smooth, round, subcutaneous swelling of doughy consistency.

Left conjunctiva and cornea normal; right conjunctiva injected and cornea ulcerated. Ophthalmoscopic examination showed left papilla cloudy, veins disturbed and tortuous; cornea interfered with examination of right retina. The presence of hemorrhage could not be determined on account of restlessness of patient. Vision not accurately ascertained, but the face of a watch could be seen. Small hardened lymphatic glands on both sides of the neck. Complexion extremely pale and cachectic. Liver and spleen somewhat enlarged. Blood-count showed one white corpuscle to three or four red.

May 27. Prof. Ebstein was called to the case, and he mentions, in addition to the above, enlargement of inguinal lymphatic glands, and nodules along the costo-cartilaginous articulations of the ribs. Blood, fluid and watery, but not wanting in fibrin.

30*th*. Pulse rapid and feeble; some fever.

June 1. Slight fever.

2*d*. Temperature, 38.3° C. Epistaxis. Evening temperature, 38.8°.

3*d*. Evening temperature, 39.5°. Bleeding from nose and mouth. Died at midnight.

Autopsy by Prof. Orth. A number of small tumors, firm and of yellowish color, were found in both pia and dura mater, which were distinctly of adenoid character. Heart contained large, yellow, firm coagula. Strong tendency to ecchymosis over surface of heart, pleuræ and the entire alimentary tract. Bronchial lymphatic glands normal, but cervical, axillary, inguinal, and mesenteric glands enlarged, as were liver and spleen. Retinæ contained numerous small hemorrhages. Papillæ swollen and pale.

The orbital tumors on section showed meshes of reticular tissue infiltrated by leucocytes; the meningeal nodules showed the same structure. Orth regarded these leukæmic neoplasms as being of the lymphadenoid variety and a secondary result of the disease. The marrow of the ribs and right femur was soft and tender, and of the brownish-yellow color of leukæmic marrow.

Fröhlich's case, reported in *Wiener med. Wochenschr.*, 1893, Nos. 7, 8, 9, 10. A man aged twenty-five years, a painter, was first seen July 27, 1892. His mother had had frequent attacks of pulmonary hemorrhage; father and several sisters healthy. In youth the patient suffered from rhachitis, of which there are still marks on thorax. No history of syphilis.

May 1. Glands of axilla enlarged, associated with cough, expectoration, and dyspnœa; soon afterward other glands were involved and upper lids of both eyes began to swell.

July 27. Tumors in lids, size of walnuts; fundus of left eye normal; right could not be examined on account of growth. Tonsils and pharynx normal; vocal cords pale and movable, with two dark-red subcordal tumors. Cervical and axillary lymphatic glands enlarged, also small swelling in middle of forehead, right humerus, and right tibia. Examination of blood showed: red corpuscles, 3,570,000; white, 137,000—1 white to 26 red; hæmoglobin 70 per cent.

30*th*. Tracheotomy performed for the alarming dyspnœa, with complete relief. A sharp attack of pleuro-pneumonia terminated fatally November 24, 1892. Blood-count during the attack showed 2,882,353 red corpuscles, 8823 white—1 white to 326 red. The writer attributes this apparent improvement in the condition of blood to the pleuro-pneumonia causing the destruction of lymphatic elements. The swelling in orbits and lymphatic glands and the subcordal tumors were greatly reduced, the latter so much that the voice before death was restored. Careful examination showed the tumors to be lymphomatous, and the reporter considered the disease pseudo-leukæmia.

Biesiadecki (*Jahrb. d. Ges. d. Aerzte*, 1876) describes a case of leukæmia with tumors of skin and enlargement of parotid glands. He also cites cases related by Haltenhoff, Mikulicz, and Gordon Norris, in which were similar growths of upper lids, parotid, and other salivary glands.

At the last Dermatological Congress, Peltauf and Riehl discussed the question of leukæmic skin tumors from a pathologico-anatomical standpoint.

Fuchs (quoted by Fröhlich) mentions the case of a man, aged sixty-one, who had for two years large lymphoid growths of upper lids, and Kaposi (*Jahrb. d. Ges. d. Aerzte,* 1885), one of lymphodermia perniciosa in connection with leukæmia.

Birk (quoted by Fröhlich) has called attention to a double exophthalmus dependent upon lymphomatous new growths of the back part of the orbit, but it is not stated whether leukæmia was present.

Hochsinger and Schiff (*Vierteljahrsschr. f. Dermat. u. Syph.,* 1887) mentions a case of leukæmia in an eight-months-old child, in which were lymphomatous growths involving head and skin.

Ziem (quoted by Fröhlich) cites a case of symmetrical swelling of both upper lids causing ptosis, in a man aged thirty, associated with enlargement of parotid glands, lymphatics of neck, of axilla, and orbital gland. Spleen not enlarged. Examination of blood showed nothing abnormal. A microscopical examination of a piece of the tumor showed quantities of granulative tissue. In the centre of the tumor was a tendency to cheesy formation, without the presence of tubercle bacilli. An intercurrent attack of erysipelas caused the tumors almost to disappear, but they returned after the attack subsided.

NEURALGIA OF THE RIGHT CRANIAL NERVE OF SIXTEEN YEARS' DURATION; EXCISION OF THE THREE DIVISIONS AT THE GASSERIAN GANGLION; DEATH.

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HISTORY AND EXAMINATION BY DR. ESKRIDGE.

Ernest G. G., aged fifty-two years, farmer, was brought to my clinic at the Medical Department of the University of Colorado, early in July, 1892. The family history shows freedom from insanity, epilepsy, neuralgia, and consumption. The father and mother lived to advanced age; the cause of their death is unknown.

The patient was always well and strong until 1876, when he cut his left wrist with a piece of pottery. A violent cellulitis involving the entire forearm resulted, numerous abscesses of the arm developed; he was